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**NAVAL WAR COLLEGE
Newport, RI**

**KEEPING AN OPERATIONAL PERSPECTIVE IN A NETWORK-CENTRIC
WORLD**

By

**Derek C. France
Major, USAF**

A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: _____

Professor Don Chisholm

Abstract

The dramatic increase in high fidelity, real-time data available to an operational commander through Network Centric Operations (NCO) has generated several instances of micro-management in recent conflicts. Operational commanders, when influenced by their own desire to control the situation, the limited nature of recent conflicts, and doctrine that encourages a focus on the highest fidelity, most real-time data, are likely to micro-manage the tactical level of war, losing the broader perspective and future orientation necessary for operational success. The antidote for micro-management is not to *limit the use* of technology; rather, it is operational leadership that understands the *limits of* technology and how to apply NCO theory to doctrine in a way that strengthens the operational level of war instead of shifting it to a tactical focus.

This paper explores the causal factors of micro-management – technology, nature of recent conflicts, leadership and doctrine. It highlights the short and long-term consequences of micro-management as well as practical ways an operational commander can recognize unwarranted tactical focus. Finally, it offers potential remedies including adjusting leadership style and doctrine that leverages the decentralizing aspects of NCO without accepting concepts that have high potential for micro-management.

INTRODUCTION

Intelligence, Surveillance and Reconnaissance (ISR) and Network Centric Operations (NCO)¹ technologies are advancing at astonishing rates giving the operational commander unprecedented access to large amounts of real-time battlespace data. This technology has great potential but its misuse can have serious consequences.

Operational commanders, when influenced by their own desire to control the situation, the limited nature of recent conflicts, and doctrine that encourages a focus on the highest fidelity, most real-time data, are likely to micro-manage² the tactical level of war, losing the broader perspective and future orientation necessary for operational success. The antidote for micro-management is not to *limit the use* of technology; rather, it is operational leadership that understands the *limits of* technology and how to apply NCO theory to doctrine in a way that strengthens the operational level of war instead of shifting it to a tactical focus.

This paper addresses the above thesis by considering recent examples of operational level micro-management, why it happens, its implications, how to avoid it, and finally, some possible ways a Joint Force Commander (JFC) can use technology without micro-managing his forces. Reasons for the trend include the increased availability of real-time ISR, the asymmetric and political nature of recent conflicts, human cognitive aspects of operational decision making, and growing doctrinal obsession with information and decision superiority. When micro-management occurs, immediate results may include tactical operator frustration with excessive oversight, reduced tactical flexibility and initiative, and the high potential for the JFC to lose sight of his operational functions and decisions. More ominous results may only be realized in a future large-scale, high intensity conflict against a symmetric adversary

fought by US forces paralyzed by reliance on a micro-managed command and control structure.

Proponents of NCO theory claim that the technology empowers the tactical level by flattening the Command and Control (C2) structure to enable better sharing of information thereby merging the levels of war. They assert that the tactical level of war will have such a high degree of battlespace awareness that the vertical C2 structure will become cumbersome.³ However, this view ignores the limits of linking technology with human decision making and the need for the operational level as a bridge between strategy and tactics. Those embracing the technology in a less extreme way rightfully suggest that emerging technology should not be put on the shelf, and there are times when an operational level commander should use NCO technology to directly influence tactical execution. This paper explores possible criteria for deciding when such an influence is warranted as well as some recommendations for how to fine tune NCO theory to use it operationally without bringing the operational commander down to the tactical level.

TWO EXAMPLES OF MICRO-MANAGEMENT

Operation ALLIED FORCE

Operation ALLIED FORCE (OAF) provides some of the clearest examples of micro-management by operational leaders. Supreme Allied Commander Europe (SACEUR), General Wesley Clark, consistently directed many details at the tactical level. General Clark and the JFACC, Lieutenant General Michael Short both had live Unmanned Aerial Vehicle (UAV) video feeds in their respective operations centers to monitor battles as they unfolded. When asked about new capabilities and systems at the Air Force Association 2000 Air

Warfare Symposium, General Short described a situation involving a Forward Air Controller (FAC), callsign “421”

We [General Short and General Clark] had live Predator video of three tanks moving down the road in Serbia and Kosovo....Call went something like this: “A lot of interest in killing those tanks, 421. I’d like you to work on it.” “Roger.” Two or three minutes went by, and 421 clearly had not found those tanks. The young major’s voice went up a bit and said, “ComAirSouth, and SACEUR are real interested in killing those tanks. Have you got them yet?” “Negative.” About two more minutes went by.... “General Short really wants those tanks killed.” And a voice came back that I’ve heard in my house for the better part of 30 years and he said, “God damn it, Dad, I can’t see the f---ing tanks!”⁴

While the story was intended as a humorous way to demonstrate real-time imaging capabilities, it is a good example of micro-management by operational commanders. The FAC’s frustrated response would have likely been similar had he not been General Short’s son, except he probably would not have keyed the microphone before saying it. Unrelated to this engagement, General Short conceded that his own tendency to micro-manage the tactical level may have accounted, in part to the F-117 shoot down during the war.⁵

Operation ENDURING FREEDOM

Operation ENDURING FREEDOM (OEF) revealed similar instances of micro-management. The Central Command (CENTCOM) Commander, General Tommy Franks was located in Tampa, Florida and had live UAV video feeds of the operations. Misuse of real-time data proved problematic during several battles:

Throughout the battles in the Shah-i-Kot region, command personnel at higher levels and those operating at other locations relayed numerous questions and much advice to the commander in the field in an attempt to contribute to the management of the battle as it unfolded...the episode reveals the powerful influence that live pictures from the battle zone may have. The last thing on earth that US field commanders need is...officers thousands of miles away from the scene of battle providing armchair advice based on pictures rolling across a television screen.⁶

Army Major General Franklin Hagenbeck, commander of regular U.S. ground forces in Afghanistan, found that the constant stream of real-time images, including US casualties as they occurred, caused commanders and staffs *above* him to think they could help by getting involved in the battle. The well-intentioned “help” during execution, only served to add confusion as tactical level operators had to filter sometimes conflicting information, justify their actions and respond to requests for information.⁷ The problems (ironically caused in part by the UAV’s limited ability to paint the entire picture) could only be resolved by the commanders on the ground at the time.

SOURCES OF MICRO-MANAGEMENT

Technology

The recent availability of C2 technology and real-time ISR data to the operational commander drives the tendency to micro-manage during execution. Ever since the rise of modern armies, operational leaders have attempted to use new technologies to increase their own battle space awareness and influence control over lower levels. Pre-industrial age commanders used visual and audible signals to control armies and navies.⁸ The advent of wireless communications prior to World War I meant that operational leaders now had a way to control previously autonomous armies and navies from beyond visual range.⁹ In Vietnam, commanders began to experiment with using helicopters to direct tactical battles from above the fight.¹⁰ While emerging real-time ISR technology continues this trend, the combination of fidelity, speed and distance exponentially increases the probability of micro-management.

Real-time, high fidelity ISR technology can be an invitation to micro-manage because it gives the usually false impression of total situational awareness from afar. The UAV live video feed can easily become the opiate of the operational commander lulling him into a

false sense of security. Pre-information age operational commanders knew that fidelity and communications limitations prevented them from knowing the details of any engagement they were not directly involved in. Yet lack of detail does not always mean lack of situational awareness. In the battle of Leyte Gulf, Admiral Nimitz arguably had better situational awareness than tactical commanders based on intuition and what he didn't see or hear rather than what he did.¹¹ The modern operational commander needs to bear in mind that while a UAV can often see the situation from a perspective unavailable to the commander on the ground, the image is often just a soda straw view of the battle space. There is no way a UAV can capture the dynamics of the tank, trench, or cockpit no matter how nice the picture looks. Discussing UAV limitations, an Army division staff officer in Afghanistan stated, "The danger is you get too focused on what you can see, and neglect what you can't see. And a lot of the time, what's happening elsewhere is more important."¹²

Nature of Recent Conflicts

JFCs have also been more involved in tactical execution because of the asymmetric nature of recent conflicts. In particular, OEF operational commanders face very little in the way of effective conventional forces. Operational objectives are very focused in nature and have become even more so. Hunting down individual Taliban and Al Qaeda leaders have become exercises in intelligence gathering, acquiring and identifying the target with ISR assets and capturing or neutralizing the often fleeting target. These tactical events draw involvement from operational commanders because of the potential for direct operational and even strategic consequences.

Operational commanders have shown themselves to be risk averse and concerned with collateral damage and unintended public opinion effects of tactical actions because of

the cultural and social factors involved in recent conflicts.¹³ Commanders may feel the need to micro-manage tactical execution to ensure military effects do not cancel out diplomatic, economic or information operations efforts. Not only do commanders have to be concerned about perceptions on the ground, but they must be aware that any ISR video feed may find its way into the media and be used to sour US public or world opinion. Rules of Engagement (ROE) and theater Special Instructions (SPINS) may become so restrictive in such an environment that they feel the need to take personal interest at the tactical level.

With the exception of the initial phases of Operation Iraqi Freedom (OIF), the individual tactical events in recent conflicts have been spaced apart enough that the operational commander may feel he has the time to spend at the tactical level. OEF in particular saw a large scale CENTCOM operational level infrastructure running a war requiring a small number of daily tactical actions. The large infrastructure was appropriate given the large Joint Operational Area (JOA), but the JFC could micro-manage tactical events because there were very few of them per day compared to the opening days of OIF or Operation DESERT STORM.

Leadership – The Human Element

Technology and the nature of recent conflicts have not by themselves caused a change in leadership, but they have allowed the operational leader to succumb to several natural human predispositions, resulting in inappropriate leadership. Operational leaders have always desired to lead the charge. Over their careers, they have proven, largely at the tactical level, that they have the experience, the training and the personalities for success. The shift from tactical leadership to operational leadership is often a difficult pill to swallow.¹⁴ Describing his experience as a WWII operational commander, General George

Patton said “The hardest thing I have to do is nothing. There is a terrible temptation to interfere.”¹⁵

Operational leaders will micro-manage a situation when they do not trust their subordinates in tactical execution or believe they could do the task more effectively. There is a tendency for leaders to fall back on “memories of lower echelon roles.”¹⁶ For example, a JFACC may see an ISR video feed and assume the pilot sees the same thing. Reverting to what he would do in the tactical situation given the same information, his natural inclination is to compare the execution he sees on the video feed with what he would do. If the two actions don’t match, the JFACC may query as to the pilot’s progress or direct his execution.

Doctrine

Certainly there is no joint doctrine on how or how not to micro-manage. However, because many joint publications stress the need for control and rapid decision-making in a high operations tempo environment, operational commanders may decide to meet those demands by micro-managing the tactical details. JP3-0 defines the “control” part of C2 as the ability to “regulate forces and functions to execute the commander’s intent...Ultimately, it provides commanders a means to measure, report and correct performance.”¹⁷ The draft JP6-0 claims that NCO “...provides the common operational picture (COP), [and] control of manned and unmanned tactical reconnaissance and attack platforms.”¹⁸ Because C2 exists at all levels (strategic, operational and tactical), the intent of this publication is undoubtedly for the commander to apply this concept of “control” at his particular level. However, the availability of real-time ISR and communications allows the operational commander to “control” individual forces at the tactical level. JP3-0 goes on to say that, “The precision with which these [ISR] systems operate significantly improves the speed and accuracy of the

information that commanders exchange.”¹⁹ The dangerous implication is that “precision” ISR at real-time “speed” is a recipe for accurate information relevant to operational decisions. While precision and speed may produce accurate information at the tactical level, the operational level requires more analysis and synthesis from many sources to reflect an accurate overall picture.

NEGATIVE CONSEQUENCES

Immediate Implications

The first casualty of micro-management during execution is frustration on the part of the tactical operator. Whether on the ground, in a cockpit, or in a ship, combat at the tactical level is demanding enough without the added direction from the operational level. A tactical operator must make countless decisions in very short amounts of time. Precious seconds lost to distractions such as questions or inputs from an operational commander may be the difference between success and failure. In other cases, the intrusion from higher levels may lead to tactical errors if tactical operators believe that higher echelons have better situational awareness, leading them to execute their mission in ways they might not otherwise. For example, in Kosovo the FAC might have been pressured into directing an attack on the “tanks” based on JFACC inputs even if he could not positively identify them or ensure a clear field of fire. That he did not testifies to his discipline despite the pressure.

A second immediate consequence is a loss of initiative at the tactical level. When operators are under the watchful eye and scrutiny from the operational level, they are conditioned to be less aggressive, waiting on guidance rather than take initiative in response to rapidly changing situations. This typically occurs when the tactical level operator has more data than the higher echelon and must convince a higher authority or ask permission

prior to acting. The trend since Operation DESERT STORM has been a shortening of nearly every step of the “Find, Fix, Track, Target, Decide, Engage, Assess” cycle accomplished in the Combined Air Operations Cell (CAOC) for time-sensitive targets. The one exception is the “Decide” step in the cycle, which has grown significantly, despite a greatly improved information network.²⁰ The decision step slows when CAOC operators either need authority from higher levels or are slow to decide on a strike knowing their tactical decisions have great visibility at higher levels. In Afghanistan, despite good situational awareness at the tactical level (to include the CAOC) many time sensitive strikes were not accomplished due to the time required for approval from CENTCOM in Tampa, Florida.²¹

The third, and arguably, most damaging, consequence of micro-management is the resulting lack of operational focus by the JFC or component commander. The operational leader must realize that despite the availability of real-time, high-fidelity data at his fingertips, his job is to exercise command and control over his entire Area of Operations (AO) to ensure the joint force meets all of its *operational* objectives. While tactical actions may have operational consequences, they are not usually operational objectives in themselves. He needs to ensure that the operational functions of intelligence, command-and-control warfare, logistics, protection and operational fires are receiving the appropriate attention.²² His job is to synchronize these functions along with non-military instruments of power to set the conditions necessary for his tactical operators to succeed.²³ Once those conditions are set, his role during execution is to monitor how the tactical event’s outcome affects ongoing and in the future operations, and determine if he can adjust any operational functions to further support the effort. By analogy, a pilot needs to develop a rapid, almost sub-conscious cross-check of all of his instruments and displays in order to process all the

required data. If he fixates on one piece of information or instrument, the results can be deadly. In a similar way, if an operational commander fixates on a tactical event, he runs the risk of ignoring all the other information required to meet operational objectives.

Long Term Consequences

Left unchecked, micro-management may become so institutionalized that it occurs un-recognized. Leadership skills will no longer be developed at the junior officer level based on trial and error. Rather, junior officers will become so desensitized to centralized execution from above that instead of causing frustration at the tactical level, they will begin to use it as a crutch. As these junior officers progress in their careers, the military will be full of senior leaders who have never developed tactical skills themselves and therefore are ill-equipped to make the leap to the operational level.²⁴

The micro-management trend is so dangerous because of its insidious nature. Despite documented problems, the US has not lost major battles or campaigns as a consequence of centralized tactical execution or a lack of operational focus. However, in the event that the US goes to war with a peer adversary, the operational level of war environment will become far less forgiving than it was in Kosovo, Afghanistan or Iraq. For example, achieving air superiority in a war with China, the US would face 700 aircraft capable of conducting combat operations over Taiwan without refueling, 800 Short Range Ballistic Missiles (SRBM) capable of reaching Taiwan, and modern SA-10 and SA-20 surface to air (SAM) systems capable of hitting aircraft anywhere in the straight.²⁵ In this environment, operational leaders unable to resist the temptation to interfere with tactics, and tactical operators who are paralyzed without specific direction will be a recipe for defeat.

COUNTER-ARGUMENTS

NCO advocates would say that the trend of micro-management merely reflects growing pains as the military transforms and embraces new technology. For example, NCO theorist David Alberts proposes that “shared battlespace awareness,” (meaning “all relevant elements of the warfighting ecosystem are provided access to the COP”) will enable “decentralization in the form of self-synchronizing forces.”²⁶ If this were true, the problem of micro-management would indeed merely be an issue of operational leadership overstepping its bounds.

However, the concept of a shared battlespace awareness based on a COP is flawed – it only includes data acquired by technology based sensors. The information Network, or Global Information Grid (GIG), accepts data at face value. While technology will increase the capability to include pertinent details picked up visually on the battlefield, an information network will never accommodate the benefit of human filters such as intuition, experience or a common sense test. Methods of sorting out conflicting data are inadequate in the GIG and can significantly slow the human decision process in the human mind. Furthermore, different individuals will likely come to different conclusions about the same picture.²⁷ The trend of micro-management from the operational level is partially a result of this flawed concept. Operational leaders are drawn to the tactical level because they are trying to fill the gaps inherent in a Network COP. They may try to fill gaps in how they see the COP by asking questions to verify intent (reference the OEF example), or they may try to “help” the tactical operator by injecting information the operator may or may not be needed, digestible or actionable (reference OAF example).

A second counter-argument is that what appears to the tactical level operator as micro-management is really increased “speed of command, or the time it takes to recognize and understand a situation (or change the situation), identify or assess options, select an appropriate course of action, and translate it into actionable orders” enabled by NCO.²⁸

However, the example offered by Alberts at the operational level concern Network collaboration to shorten *planning* time, not *execution*. NCO is powerful when used to speed tactical execution.²⁹ Yet operational level speed of command must be balanced against the time required for a commander to employ operational art. Just as it would be unwise to rush an artist at the expense of creative talent, it is equally unwise to expect an operational commander to substitute a quick decision for the right decision. Unfortunately, when operational level commanders search for a way to increase their speed of command, they look to the one arena where it can be done – the tactical level.

A final counter-argument is that operational leaders need to be involved in tactical actions to prevent collateral damage or fratricide. Some might point to the friendly fire incident involving US F-16s and Canadian ground forces in April, 2002 in Afghanistan and conclude that if an operational leader had stepped in he might have prevented the fratricide. This ignores the fact that the tactical level of C2 (the Mission Crew Commander aboard the AWACS) did everything correctly during the four minute incident. The final Board of Inquiry concluded: “The MCC negated all requests for weapon employment until the self-defence call was made. The instant that call was made, the MCC, with good reason, felt he could not influence the issue any further, or at least until the self-defence situation was resolved.”³⁰ The chances of fratricide might have been dramatically decreased by a tactical level network; however, once there was a discrepancy between the pilot’s visual perception

of being threatened and the situation portrayed on the Network, micro-management of the situation would have little effect on the outcome.

RECOMMENDATIONS

In order to use ISR and NCO technology to maintain an operational perspective without micro-managing his forces, an operational commander must recognize the sources of the tendency to micro-manage (technology, nature of the conflict, leadership and doctrine), and guard against the trend identifying areas he can control or better understand. Of the four, we can not (nor do we want to) stop development of new technology. Nor do we have much control over the fundamental nature of conflicts. However, there is room for improvement in the areas of leadership and evolving doctrine. By understanding his own human limits, the limits of the technology and how to apply emerging doctrinal concepts, an operational commander can bring technology to the operational level rather than use it to micro-manage tactics.

Leadership

An operational leader must understand the limits of technology, recognize indications that he might be micro-managing and exercise discipline in his decision making efforts. He must realize that looking at any one sensor in isolation is inherently risky. Because it is unreasonable for the commander to know the specific limitations of every system, it is equally unrealistic for him to be able to put one sensor in context. Even if he is aware of individual limits, he must recognize that looking at one sensor in isolation is like a conductor, responsible for leading an entire orchestra, listening to only one instrument – the tune significantly changes depending on the instrument chosen. A conductor in such a situation

would undoubtedly do two things: One, lose perspective of the rest of the orchestra and two, micro-manage the instrument in isolation in an attempt to control the situation.

An operational commander must also recognize indications that he might be dipping into the tactical arena. Commanders tend to micro-manage most when under stress. As such, they are likely to abandon prioritizations, cling to what is known without considering the unknowns of a situation, and concentrate on short-term problems instead of long-term consequences.³¹ Another indicator is if the commander becomes a “serial processor,” able to handle only one problem at a time.³² The operational commander’s span of control is too large for this type of decision making. To be operationally effective, he must be able to make broad decisions that solve or address multiple problems. If not addressed early, micro-management may cause breakdowns in operational functions or synchronization issues. Unfortunately, these indicators are usually only available after the fact.

Relying on indicators of micro-management is not enough; a commander must also exercise proactive discipline in operational decision making. He needs enough confidence in his forces to issue “task-type” orders to facilitate decentralized execution.³³ The bedrock for this confidence is a properly crafted statement of commander’s intent. Commander’s intent is not merely a planning tool required by the Commander’s Estimate of the Situation process, but should be a statement enabling the lowest echelon leaders to make the right decisions in time critical situations.³⁴ Micro-management is unavoidable if the operational commander feels he can use technology to relay his intent as the situation unfolds.³⁵ Similarly, the theater ROE and SPINS must match the commander’s intent and enable war fighters. If SPINS constantly require permission to take tactical actions, they become just another method of micro-management with many of the same consequences.³⁶

The ultimate challenge for an operational commander is to determine if and when it is warranted to transition to the tactical level. The likelihood of tactical intervention increases “in scenarios requiring immediate action or where an error can lead to severe political or strategic consequences.”³⁷ For instance, no one would expect the decision to use nuclear force to be delegated to the lowest level. Yet commanders must realize that their well meaning influence may only serve to confuse the situation and cause more errors. If providing information, he should ensure it is relevant to the situation, easily put in context by the operator and not something already known. If a critical tactical event is in danger of failing, he may need to intervene directly. However, he should realize that his responsibility is to determine the effect of that failed mission with respect to the synchronization of forces and operational functions. In all cases, he should never confuse the ability to be involved in tactical action with the justification of doing so.

Finally, the military must also address some of the fundamentals that lie at the heart of effective operational leadership. General officer must be more “general.” Services, particularly the Air Force and Navy, need to broaden the horizons of their general officers as their career progresses. Officers who stay in one specialty are more likely to gravitate to the tactics of that particular mission when they need to concentrate on operational matters. Secondly, the concept of the commander’s intent needs to be pushed to a lower level than it is today. To avoid micro-managing, the military must foster an environment in which an operational commander is held accountable for his operational concept, and his ability to clearly impart his *intent* to his troops, not the tactical execution of individuals.

Evolving Doctrine

The second key to curbing micro-management is to look critically at what NCO bring to the table and how to incorporate the technology into Joint doctrine while mitigating the hidden risks. Alberts claims that, “Technology has compressed the space and time continuum, and political realities have collapsed the clear separations among the strategic, operational and tactical levels...”³⁸ Yet it would be unwise to blindly accept the idea that the three levels of war are unavoidably merging. Besides linking strategy to tactics, one of the reasons the operational level exists is to deal with the inevitable fog and friction of war. NCO may reduce, but not eliminate, some fog and friction; however, it can easily introduce a fog and friction all its own.

Any Net-centric emerging concept must continue to stress the operational level of war and its appropriate boundaries. NCO theory promotes battlespace awareness (based on a COP) that “does not exist at just one place (node) in the battlespace, but rather at all relevant nodes in the battlespace – across echelons and functional components... The degree of detail that is portrayed in an operational picture can and most likely will vary by echelon.”³⁹ A better way of thinking about the COP without blurring the levels of war is to divide the picture into an *Operational* Picture (OP) and a *Tactical* Picture (TP). The TP would link tactical battlespace entities (sensors, shooters and tactical level C2), allowing horizontal information exchange to increase situational awareness. However, the OP, instead of merely a less-detailed picture of friendly and enemy forces, status and environment, would include elements that are uniquely operational in nature. To be useful to the operational commander, the OP should be of a format to include other instruments of national power (diplomatic, informational and economic), as well as operational functions (intelligence, operational fires,

C2 warfare, logistics and protection). Clearly the two pictures could not exist in isolation. There will need to be work done to determine the nature of the links and the level of visibility between the two. Dividing the pictures is simply a conceptual way to highlight NCO theory's strengths of horizontal information flow at the tactical level while trying to harness those same strengths at the operational level. It can potentially reduce the tendency the operational commander to micro-manage, allow him to concentrate on operational functions, and give him the flexibility to see and influence the tactical picture if required.

CONCLUSION

NCO is not the root of all evil. It is based on developing technology and, like any new technology, has hidden risks that are sometimes only seen after application. This paper has analyzed one of the hidden risks of NCO: the tendency for operational leaders to use the technology to micro-manage tactical forces. Some driving factors, like the pace of new technology and the nature of recent conflicts are beyond our control. However, the factors of leadership and how we apply NCO theory are worth dissecting to see where we can change and influence them. Operational leadership is the key. A strong operational commander must understand his own limits and the limits of technology around him. He must constantly guard against interfering at the tactical level (unless absolutely required), while keeping a broad operational perspective. To better incorporate NCO theory into doctrine, we must resist blindly accepting tenets that violate proven principles or doctrine. Specifically, NCO does not eliminate or even minimize the operational level of war. It is a powerful tactical level theory which needs to be fine tuned to support the operational commander rather than lure him into the tactical details.

NOTES

¹ Network-Centric Warfare (NCW) is a more commonly used term; however, the draft Joint Pub 6-0 adapts the concept as Network Centric Operations (NCO), defined as “military operations that exploit state-of-the-art information and networking technology to integrate widely dispersed human decision makers, situational and targeting sensors, and forces and weapons into a highly adaptive, comprehensive system.” U.S. Joint Chiefs of Staff, Doctrine for Communications Systems Support to Joint Operations, Joint Pub 6-0, Final Coordination (2) (Washington, DC: 14 February 2005), GL-11.

² For the purposes of this paper, micro-management specifically refers to an operational commander (JFC or component commander) involved in tactical *execution* to the extent that he interferes with mission accomplishment or neglects his operational functions. Micro-management during the planning phase is an issue, but beyond the scope of this discussion.

³ David S. Alberts, John J. Garstka, and Frederick P. Stein, Network Centric Warfare: Developing and Leveraging Information Superiority (2nd ed., rev.) (Washington, DC: DoD C4ISR Cooperative Research Program, 2000), 88.

⁴ Michael C. Short, “Operation ALLIED FORCE,” Speech, Air Warfare Symposium 2000, Orlando, FL: 25 February 2000. <<http://www.aef.org/pub/short200.asp>> [20 January 2006].

⁵ Howard D. Belote, “Paralyzed or Pulverized? The Fall of the Republican Guard,” Joint Forces Quarterly, no.37 (2005): 45.

⁶ Anthony J. Cordesman with Patrick Baetjer, “The Ongoing Lessons of Afghanistan: Warfighting, Intelligence, Force Transformation, and Nation Building” (Washington, DC: Center for Strategic and International Studies, 2004), 40-41.

⁷ Thomas E. Ricks, “Beaming the Battlefield Home: Live Video of Afghan Fighting had Questionable Effects,” Washington Post, 26 March 2002, A01.

⁸ Kenneth Allard, Command, Control, and the Common Defense (rev. ed.) (Washington, DC: National Defense University, 1996), 39.

⁹ Roger Beaumont, The Nerves of War: Emerging Issues in and References to Command and Control (Washington, DC: AFCEA International Press, 1986), 14.

¹⁰ David Jablonsky, “US Military Doctrine and the Revolution in Military Affairs,” Parameters 24 (Autumn 1994): 18. <<http://carlisle-www.army.mil/usawc/parameters/1994/jablonski.htm>> [28 December 2005].

¹¹ Professor Donald Chisholm, Joint Military Operations Department, Naval War College, Newport, RI, interview by author, 30 January 2006, Naval War College, Newport, RI.

¹² Ricks, A01.

¹³ Milan N. Vego, “What Can We Learn From Enduring Freedom?,” United States Naval Institute Proceedings 128, no.7 (July 2002): 28. Proquest [14 December 2005].

¹⁴ John P. Springett, “Network Centric War without Art,” United States Naval Institute Proceedings 130, no.2 (February 2004): 58. Proquest [28 December 2005].

¹⁵ George S. Patton, quoted in Todd Harmer, “Enhancing the Operational Art: The Influence of the Information Environment on the Command-and-Control of Airpower,” (Unpublished Research Paper, School of Advanced Airpower Studies, Air University, Maxwell Air Force Base, AL: June 2000), 30.

¹⁶ Beaumont, 27.

¹⁷ U.S. Joint Chiefs of Staff, Doctrine for Communications Systems Support to Joint Operations, Joint Pub 6-0, Final Coordination (2) (Washington, DC: 14 February 2005), I-6.

¹⁸ U.S. Joint Chiefs of Staff, Doctrine for Joint Operations, Joint Pub 3-0 (Washington, DC: 10 September 2001), II-18.

¹⁹ Ibid., II-19.

²⁰ Weiners, F., “Operation ENDURING FREEDOM Preliminary Lessons,” Lecture, Air War College, Maxwell Air Force Base, AL: 25 October 2002, quoted by Richard Gomez, “Centralized Command – Decentralized Execution: Implications of Operating in a Network Centric Warfare Environment,” (Unpublished Research Paper, Air War College, Maxwell Air Force Base, AL, n.d.), 12.

²¹ Milan N. Vego, “Operational Command and Control in the Information Age” Joint Force Quarterly, no.35 (2004): 105.

²² Milan N. Vego, “Net-Centric is Not Decisive,” United States Naval Institute Proceedings 129, no.1 (January 2003): 52. Proquest [14 December 2005].

²³ Ibid.

²⁴ Springett, 58.

²⁵ U.S. Office of Secretary of Defense, Annual Report to Congress: The military power of the People’s Republic of China 2005 (Washington, DC: 2005), 32, 44-45.

- ²⁶ Alberts, Garstka, and Stein, 107, 135.
- ²⁷ Alan D. Zimm, “Human-centric warfare,” United States Naval Institute Proceedings 125, no.5 (May 1999): 28. EBSCOhost [28 December 2005].
- ²⁸ Alberts, Garstka, and Stein, 163.
- ²⁹ Vego, “Net-Centric is Not Decisive”, 52.
- ³⁰ Tarnak Farm Board of Inquiry, Final Report (19 June 2002): 30.
<<http://www.vcds.forces.gc.ca/boi/00native/final-report.doc>> [20 January 2006].
- ³¹ Zimm, 28.
- ³² Ibid.
- ³³ Vego, “Operational Command and Control In the Information Age,” 106.
- ³⁴ Joint Military Operations Department, Naval War College, Commander’s estimate of the Situation, NWC 4111G (Newport, RI: n.p. 30 September 2004), I-29.
- ³⁵ Springett, 58.
- ³⁶ Ibid.
- ³⁷ Vego, “Operational Command and Control In the Information Age,” 106.
- ³⁸ Alberts, Garstka, and Stein, 70.
- ³⁹ Ibid., 135.

Bibliography

- Alberts, David S., John J. Garstka, and Frederick P. Stein. Network Centric Warfare: Developing and Leveraging Information Superiority, 2nd ed., rev. Washington, DC: DoD C4ISR Cooperative Research Program, 2000.
- Alberts, David S., and Richard E. Hayes. Power to the Edge: Command...Control...in the Information Age. Washington, DC: DoD C4ISR Cooperative Research Program, 2003.
- Allard, Kenneth. Command, Control, and the Common Defense, rev. ed. Washington, DC: National Defense University, 1996.
- Beaumont, Roger. The Nerves of War: Emerging Issues in and References to Command and Control. Washington, DC: AFCEA International Press, 1986.
- Belote, Howard D. "Paralyzed or Pulverized? The Fall of the Republican Guard." Joint Force Quarterly, no.37 (2005): 40-45.
- Chisholm, Donald. Joint Military Operations Department, Naval War College, Newport, RI. Interview by author, 30 January 2006. Naval War College, Newport, RI.
- Cordesman, Anthony J. with Patrick Baetjer. "The Ongoing Lessons of Afghanistan: Warfighting, Intelligence, Force Transformation, and Nation Building." Washington, DC: Center for Strategic and International Studies, 2004.
- Harmer, Todd P. "Enhancing the Operational Art: The Influence of the Information Environment on the Command-and-Control of Airpower." Unpublished Research Paper, School of Advanced Airpower Studies, Air University, Maxwell Air Force Base, AL: June 2000.
- Jablonsky, David. "US Military Doctrine and the Revolution in Military Affairs." Parameters 24 (Autumn 1994): 18-36. <<http://carlisle-www.army.mil/usawc/parameters/1994/jablonski.htm>> [28 December 2005].
- Joint Military Operations Department, Naval War College, Commander's Estimate of the Situation, NWC 4111G. Newport, RI: 30 September 2004.
- Short, Michael C. "Operation ALLIED FORCE." Speech. Air Warfare Symposium 2000, Orlando, FL: 25 February 2000. <<http://www.aef.org/pub/short200.asp>> [20 January 2006].
- Springett, John P. "Network Centric War without Art." United States Naval Institute Proceedings 130, no.2 (February 2004): 58-61. Proquest [28 December 2005].

- Tarnak Farm Board of Inquiry. Final Report. n.p.:19 June 2002.
<<http://www.vcds.forces.gc.ca/boi/00native/final-report.doc>> [20 January, 2006].
- U.S. Joint Chiefs of Staff. Department of Defense Dictionary of Military and Associated Terms. Joint Pub 1-02. Washington, DC: 12 April 2001.
- _____. Doctrine for Communications Systems Support to Joint Operations. Joint Pub 6-0, Final Coordination (2). Washington, DC: 14 February 2005.
- _____. Doctrine for Joint Operations. Joint Pub 3-0. Washington, DC: 10 September 2001.
- U.S. Office of Secretary of Defense. Annual Report to Congress: The military power of the People's Republic of China 2005. Washington, DC: 2005.
- Vego, Milan N. "Operational Command and Control in the Information Age." Joint Force Quarterly, no.35 (2004): 100-107.
- _____. "Net-Centric is Not Decisive." United States Naval Institute Proceedings 129, no.1 (January 2003): 52-57. EBSCOhost. [14 December 2005].
- _____. "What Can We Learn From Enduring Freedom?" United States Naval Institute Proceedings 128, no.7 (January 2002): 28. Proquest. [14 December 2005].
- Weiners, F. "Operation ENDURING FREEDOM Preliminary Lessons." Lecture. Air War College, Maxwell Air Force Base, AL: 25 October 2002. Quoted in Richard Gomez, "Centralized Command – Decentralized Execution: Implications of Operating in a Network Centric Warfare Environment." Unpublished Research Paper, Air War College, Maxwell Air Force Base, AL: n.d.
- Zimm, Alan D. "Human-centric warfare." United States Naval Institute Proceedings 125, no.5 (May 1999): 28-31. EBSCOhost. [28 December 2005].